

CLAIMS

Claim 1 (original) A route selection method for a voice communication system, which system comprises:

a plurality of networks including IP networks; and

a plurality of voice gateways, interconnecting said IP networks with the other networks for voice communication,

said voice gateways being hierarchically divided into first voice gateways for accommodating nodes of said networks other than the IP networks, and second voice gateways for delivering information about the route selection;

said method comprising the steps of:

(a) controlling each of said second voice gateways to hold a route selection table indicating a correspondence between steering numbers and transport addresses for identifying routes in the IP network;

(b) controlling one of said first voice gateways as an originating voice gateway to transmit a destination inquiring message, including a transport address of said originating voice gateway and a destination office number, to a predetermined one of said second voice gateways in which said destination inquiring message is collated with said route selection table thereof and is forwarded towards one of said first voice gateways as a destination voice gateway; and

(c) controlling said destination voice gateway to transmit a destination determination message including a transport address of said destination voice gateway to said originating voice gateway.

Claim 2 (original) The route selection method as claimed in claim 1, wherein said step (a) further includes a step of controlling said voice gateway, in a predetermined case, to transmit a steering number and a transport address thereof to said second voice gateway.

Claim 3 (original) The route selection method as claimed in claim 1, further comprising a step of:

(d) controlling said originating voice gateway, after receiving said destination determination message, to record a destination transport address and a destination steering number, which are included in said destination determination message, in a route selection table thereof,

said route selection table indicating a correspondence between said destination transport address and said destination steering number.

Claim 4 (original) The route selection method as claimed in claim 1, further comprising a step of:

(e) controlling said originating voice gateway, after receiving said destination determination message, to refer to traffic between said originating voice gateway and said destination voice gateway, and then only when said traffic meets a predetermined traffic requirement, record a destination transport address and a destination steering number which are included in said destination determination message in a route selection table thereof,

said route selection table indicating a correspondence between said destination transport address and said destination steering number.

Claim 5 (original) The route selection method as claimed in claim 3, further comprising

a step of:

(f) controlling said originating voice gateway, in a case of failing to set up a call towards said transport address recorded in said route selection table thereof, to transmit said destination inquiring message to said predetermined second voice gateway.

Claim 6 (original) The route selection method as claimed in claim 1, further comprising a step of:

(g) deleting said transport address and said steering number from said route selection table, if said transport address recorded on said route selection table is not referred to during a predetermined period.

Claim 7 (original) The route selection method as claimed in claim 1, further comprising a step of:

(h) controlling said second voice gateway, in a case of failing to deliver said route selection information, to transmit a failure message to said originating voice gateway, so that said originating voice gateway selects the network other than the IP networks to set up the call.

Claim 8 (original) The route selection method as claimed in claim 1, further comprising a step of:

(i) notifying said second voice gateway, when said steering number or said transport address of said voice gateway is changed, of said changed steering number or said changed transport address.

Claim 9 (canceled)

Claim 10 (currently amended) A voice gateway interconnecting IP networks with other networks for voice communication, said voice gateway comprising:

a call-setup part which after detecting a call-setup request from one of said other networks, transmits a destination inquiring message to a predetermined voice gateway, and after receiving a destination determination message from a destination voice gateway, performs a call setup towards a destination transport address included in said destination determination message from said destination voice gateway; and

The voice gateway as claimed in claim 9, further comprising:

a transmitting part which, in a predetermined case, transmits a steering number and a transport address of said voice gateway to said predetermined voice gateway;

wherein said predetermined voice gateway holds a route selection table, compares said destination inquiring message with said route selection table, determines a route to said destination voice gateway and forwards said destination inquiring message toward said destination voice gateway;.

Claim 11 (currently amended) A voice gateway interconnecting IP networks with other networks for voice communication, said voice gateway comprising:

a call-setup part which after detecting a call-setup request from one of said other networks, transmits a destination inquiring message to a predetermined voice gateway, and after receiving a destination determination message from a destination voice gateway, performs a call setup towards a destination transport address included in said destination determination message from said destination voice gateway; and

The voice gateway as claimed in claim 9, further comprising:

a recording part which records said destination transport address and a destination steering number of said destination voice gateway, which are included in said destination determination message, in a route selection table thereof, said route selection table indicating a correspondence between said destination transport address and said destination steering number of said destination voice gateway;

wherein said predetermined voice gateway holds a route selection table, compares said destination inquiring message with said route selection table, determines a route to said destination voice gateway and forwards said destination inquiring message toward said destination voice gateway.

Claims 12 (currently amended) ^{box 64} A voice gateway interconnecting IP networks with other networks for voice communication, said voice gateway comprising:

a call-setup part which after detecting a call-setup request from one of said other networks, transmits a destination inquiring message to a predetermined voice gateway, and after receiving a destination determination message from a destination voice gateway, performs a call setup towards a destination transport address included in said destination determination message from said destination voice gateway; and

The voice gateway as claimed in claim 9, further comprising:

a recording part which, after receiving said destination determination message from said destination voice gateway, refers to traffic between said ^{7 prede} voice gateway and said destination voice gateway, and, only when said traffic meets a predetermined traffic requirement, records said destination transport address and a destination steering number of said destination voice gateway in a route selection table thereof, said route selection table indicating a correspondence between

said destination transport address and said destination steering number of said destination voice gateway;

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wherein said predetermined voice gateway holds a route selection table, compares said destination inquiring message with said route selection table, determines a route to said destination voice gateway and forwards said destination inquiring message toward said destination voice gateway.

Claim 13 (original) The voice gateway as claimed in claim 11, said call-setup part comprising:

a quick-call-setup part, which after detecting said call-setup request, refers to said route selection table so as to obtain said destination transport address, and then performs said call setup towards said destination transport address; and

a transmitting part which, in a case of said quick-call-setup part failing to perform said call setup towards said destination transport address, transmits said destination inquiring message to said predetermined voice gateway.

Claim 14 (original) The voice gateway as claimed in claim 11, further comprising:

a deleting part which deletes said destination transport address and said corresponding destination steering number from said route selection table if said destination transport address recorded on said route selection table is not referred to during a predetermined period.

Claim 15 (currently amended) The voice gateway as claimed in claim 9 10, further comprising:

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a receiving part which receives a failure message in a case where said destination

inquiring message has been transmitted to said predetermined voice gateway but said destination cannot be detected and

an alternate-~~cal~~call-setup part which selects a network other than one of the IP networks to perform said call setup when said failure message is received.

Claim 16 (currently amended) A voice gateway interconnecting IP networks with other networks for voice communication, said voice gateway comprising:

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a call-setup part which after detecting a call-setup request from one of said other networks, transmits a destination inquiring message to a predetermined voice gateway, and after receiving a destination determination message from a destination voice gateway, performs a call setup towards a destination transport address included in said destination determination message from said destination voice gateway; and

The voice gateway as claimed in claim 9, further comprising:

a notifying part which, when said steering number and said transport address of said voice gateway are changed, notifies said predetermined voice gateway of said changed steering number and said changed transport address;

wherein said predetermined voice gateway holds a route selection table, compares said destination inquiring message with said route selection table, determines a route to said destination voice gateway and forwards said destination inquiring message toward said destination voice gateway.

Claim 17 (previously amended) A voice gateway interconnecting IP networks and other networks for voice communication, said voice gateway comprising:

a transmitting part which, after receiving a destination inquiring message, refers to a

route selection table thereof, which route selection table indicates a correspondence between steering numbers and transport addresses, and then transmits said destination inquiring message towards a transport address obtained by referring to said route selection table for forwarding said destination inquiring message toward a destination voice gateway,

wherein said voice gateway receives said destination inquiring message from an originating voice gateway, and said destination voice gateway sends a destination determination message to said originating voice gateway.

Claim 18 (original) The voice gateway as claimed in claim 17, further comprising:
a transmitting part which, in a predetermined case, transmits a steering number and a transport address to a predetermined voice gateway; and
a recording part which, after receiving a steering number and a transport address from another voice gateway in said predetermined case, records said received steering number and said received transport address in said route selection table thereof.

Claim 19 (original) The voice gateway as claimed in claim 17, further comprising:
a deleting part which deletes said transport address and said corresponding steering number from said route selection table if said transport address recorded in said route selection table is not referred to during a predetermined period.

Claim 20 (original) The voice gateway as claimed in claim 17, further comprising:
a failure-message transmitting part which transmits a failure message to an originating voice gateway which has transmitted said destination inquiring message, in a case where said destination cannot be detected even though said destination inquiring message has been received

and said route selection table has been referred to.

Claim 21 (original) The voice gateway as claimed in claim 17, further comprising:

a notifying part which, when said steering number and said transport address are changed, notifies a predetermined voice gateway of said changed steering number and said changed transport address; and

a recording part which receives a steering number and a transport address from another voice gateway and records said steering number and said transport address in said route selection table.

Claim 22 (currently amended) A computer readable medium storing program code for controlling a voice gateway interconnecting IP networks with other networks for voice communication, said computer readable medium comprising:

program code means for, after said voice gateway detects a call-setup request from one of said other networks, controlling said voice gateway to transmit a destination inquiring message to a predetermined voice gateway, and after said voice gateway receives a destination determination message from a destination voice gateway, controlling said voice gateway to perform a call setup towards a destination transport address included in said destination determination message,

wherein said predetermined voice gateway holds a route selection table, compares said destination inquiring message with said route selection table, determines a route to said destination voice gateway and forwards said destination inquiring message toward said destination voice gateway.

Claim 23 (original) A computer readable medium storing program code for controlling a voice gateway interconnecting IP networks and other networks for voice communication, said voice gateway comprising:

program code means for, after said voice gateway receives a destination inquiring message, controlling said voice gateway to refer to a route selection table indicating a correspondence between steering numbers and transport addresses, and then transmit said destination inquiring message towards a transport address obtained by referring to said route selection table for forwarding said destination inquiring message toward a destination voice gateway,

wherein said voice gateway receives said destination inquiring message from an originating voice gateway and said destination voice gateway sends a destination determination message to said originating voice gateway.

Claim 24 (original) A route selection method for voice gateways which are hierarchically divided into first voice gateways for accommodating nodes of networks other than IP networks, and second voice gateways for transferring information about a route selection, said method comprising the steps of:

(a) controlling each of said second voice gateways to hold a route selection table indicating a correspondence between steering numbers and transport addresses for identifying routes on the IP network;

(b) controlling one of said first voice gateways as an originating voice gateway to transmit a destination inquiring message, including a transport address of said originating voice gateway and a destination office number, to a predetermined one of said second voice gateways in which said destination inquiring message is collated with said route selection table thereof and

is forwarded towards one of said first voice gateways as a destination voice gateway; and

(c) controlling said destination voice gateway to transmit a destination determination message including a transport address of said destination voice gateway to said originating voice gateway.